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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/928,598	08/13/2001	Marc Bolduc	G&C 30566.197-US-01	7530

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GATES & COOPER LLP
HOWARD HUGHES CENTER
6701 CENTER DRIVE WEST, SUITE 1050
LOS ANGELES, CA 90045

EXAMINER

COFFY, EMMANUEL

ART UNIT	PAPER NUMBER
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2157

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/928,598	Applicant(s) BOLDUC ET AL.	
	Examiner Emmanuel Coffy	Art Unit 2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 September, 2005 has been entered.

Claims 1-30 directed to an apparatus, method, and software for "Displaying Image Data" are pending. Claims 1, 8, 11, 18, 21 and 28 are amended.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 8, 11, 18, 21 and 28 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4-9, 11-12, 14-19, 21-22, 24-29 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sen et al. (US 6,691, 312) in view of Aharoni et al. (US 6,014,694) in further view of Duruöz et al. (US 6,658,056).
Sen substantially teaches the invention as claimed including a method of

multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

As for claim 1, Sen substantially teaches the method of claim 1 including viewing image data comprising'. (See Fig. 1)

(a) display means', (See Fig. 1 (102))

(b) network connecting means for transferring frames of said image data over a network from a remotely connected frame source, wherein: (Fig. 1 (108a 108b, 108c))

(i) said image data comprises a plurality of image frames and has a frame rate from which may be inferred a correct time for display of each frame in a sequence of frames in said image data', (See Fig. 4, Fig. 5, Fig. 6.)

Sen does not expressly disclose "a frame source, which returns a frame in response to a frame request issued over said network" nor does it suggest "processing means configured to play a clip." However, Aharoni teaches that the function of the video server is to accept a remote client connection request, retrieve a local or remote stored file and transmit it to the client. (See col. 11, lines 29-31). Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally.

Neither Sen nor Aharoni expressly discloses:

(i) displaying selected frames from said frame source, on said display means, at their due time in order to maintain timing integrity of the clip; and

(ii) skipping frames in said frame sequence in response to an indication of the data transfer rate of said network. However, Duruöz does. See col. 6, lines 5-35; col. 9, lines 54-59; col. 11, lines 40-65 and col. 16, lines 13-45.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen comparing and the sending rate to the receiving rate as disclosed by Aharoni with the frame rate converting method as disclosed by Duruöz. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 2 and 22:

Sen teaches the apparatus of claim 1 wherein a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose an indication of the data transfer rate provided by a comparison of the relative position of an input and an output pointer in a queue of frames that have been selected for display. However, Aharoni expressly teaches comparing the sending rate to the receiving rate at col. 4, lines 31-34.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by

Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 4, 14 and 24:

Sen teaches the apparatus of claim 1 wherein a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose frames that are skipped in response to a prediction of a network data transfer rate. However, Aharoni expressly teaches skipping frames in response to measured bandwidth of the channel at col. 12, lines 47-51 and col. 4, lines 46-55.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with skipping frames in response to measured bandwidth of the channel as disclosed by Aharoni. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 5, 15 and 25:

Sen teaches the apparatus of claim 1 wherein a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose frames that are prefetched into a frame queue prior to their due time. However, Aharoni expressly discloses prefetching frames into frame queue at col. 2, line 66- col. 3, line 8 and col. 12, lines 42-47.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with prefetching frames into frame queue as disclosed by Aharoni. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 6, 16 and 26:

Sen teaches the apparatus of claim 1 wherein a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose a frame skip rate which is defined by a user. However, Aharoni expressly discloses accessing rate constraints of nodes in the distribution tree at col. 1, line 65 - col. 3, line 12.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with accessing rate constraints of nodes as disclosed by Aharoni. This system would be preferable in that it would provide for custom frame skip rate.

Claims 7, 17 and 27:

Sen teaches the apparatus of claim i wherein a method of multicasting video to

multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

Sen fails to disclose a frame selection for display by processing its due time with elapsed real time since playback started. However, Aharoni expressly discloses packet selection for display at col. 16, lines 24 - 29 and col. 8, lines 25-41.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with packet selection for display as disclosed by Aharoni. This system would be preferable in that the sender constantly tries to utilize the available bandwidth as efficiently as possible by keeping the network pipe full.

Claims 8 and 18:

Sen teaches apparatus for displaying image data, comprising: (See Fig. 1)

(a) image data comprising a plurality of image frames, sequences of said frames being organised into clips, each clip having a frame rate, and each frame in a clip thereby having a due time for display with respect to a start time for playing the clip',

(b) display means', (See Fig. 1 (102))

(c) memory means', (See Fig. 1)

(d) network connecting means for enabling transfer of image data over a network from a frame source remotely connected to said network', and (See Fig. 1 (108a, 108b, 108c)).

(e) processing means configured to perform operations to play a clip from said

frame source by: (See Fig. 1)

Sen does not expressly disclose a frame source, which returns a frame in response to, a frame request issued over said network nor does it suggest processing means configured to play a clip. However, Aharoni teaches that the function of the video server is to accept a remote client connection request, retrieve a local or remote stored file and transmit it to the client. (See col. 11, lines 29-31). Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally. Neither Sen nor Aharoni expressly discloses:

- (i) selecting a next frame for preloading by skipping at least one frame in the clip's frame sequence;
- (ii) preloading a frame from said frame source into a frame queue in said memory means';
- (iii) displaying a preloaded frame at its due time in order to maintain timing integrity of the clip;
- (iv) processing elapsed real time since the clip started playing with a frame timing parameter', and
- (v) updating the number of frames to skip in response to said processing of elapsed real time.

However, Duruöz does. See col. 6, lines 5-35; col. 9, lines 54-59; col. 11, lines 40-65

and col. 16, lines 13-45. Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen comparing and the sending rate to the receiving rate as disclosed by Aharoni with the frame rate converting method as disclosed by Duruöz. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 9, 19 and 29:

Sen teaches apparatus according to claim 8, wherein said frame timing parameter is the due time for a frame. Sen does not expressly disclose a frame timing parameter. However, Aharoni teaches displaying selected frames from said frame source, on said display means, at their due time; and (See col. 8, lines 24-41).

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally.

Claims 11 and 21:

Sen teaches a method of displaying image data on an image viewing station, ' wherein: (a) the image viewing station comprises display means, processing means, and network connecting means for transferring frames of said image data over a network from a remotely connected frame source',

(b) said image data comprises a plurality of image frames, and has a frame rate

from which may be inferred a correct time for display of each frame in a sequence of frames in said image data',

(c) said frame source returns a frame in response to a frame request issued over said network', and

(d) said processing means is configured to play a clip in which said method comprises'.

(i) displaying selected frames from said frame source, on said display means, at their correct time based on the frame rate in order to maintain timing integrity of the clip; and

(ii) skipping frames in said frame sequence in response to an indication of the data transfer rate of said network.

Sen does not expressly disclose a frame source, which returns a frame in response to, a frame request issued over said network nor does it suggest processing means configured to play a clip. However, Aharoni teaches that the function of the video server is to accept a remote client connection request, retrieve a local or remote stored file and transmit it to the client. (See col. 11, lines 29-31). Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally. Neither Sen nor Aharoni expressly discloses:

i) displaying selected frames from said frame source, on said display means, at their

Art Unit: 2157

due time', and

(ii) skipping frames in said frame sequence in response to an indication of the data transfer rate of said network. However, Duruöz does. See col. 6, lines 5-35; col. 9, lines 54-59; col. 11, lines 40-65 and col. 16, lines 13-45.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen comparing and the sending rate to the receiving rate as disclosed by Aharoni with the frame rate converting method as disclosed by Duruöz. This system would be preferable in that it would provide for coping with variable bandwidth challenges of transporting video over any network generally.

Claim 12:

Sen teaches a method according to claim 11, wherein said indication of the data transfer rate is provided by a comparison of the relative position of an input and an output pointer in a queue of frames that have been selected for display.

Sen fails to disclose an indication of the data transfer rate provided by a comparison of the relative position of an input and an output pointer in a queue of frames that have been selected for display. However, Aharoni expressly teaches comparing the sending rate to the receiving rate at col. 4, lines 31-34.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with comparing the sending rate to the receiving rate as disclosed by Aharoni. This system is preferable in that it provides for coping with variable bandwidth challenges of

transporting video over any network generally.

5. Claims 3, 13 and 23 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sen et al. (US 6,691,312) in view of Hazra (US 6,510,553.)

Sen substantially teaches the invention as claimed including a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

As for claim 3, 13 and 23 Sen fails to disclose means for storing pre-rendered image frames. However, Hazra expressly discloses means for storing rendered image at col. 11, lines 1 - 9 and 20-24.

Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with means for storing rendered image as disclosed by Hazra. This system would be preferable in that the quality of the streaming video would not be a function of the available bandwidth.

6. Claims 10, 20 and 30 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sen et al. (US 6,691,312) in view of Tremblay et al. (US 6,343,348.)

Sen teaches the invention as claimed including a method of multicasting video to multiple client nodes via intermediate nodes that includes accessing video information descriptive of the video to be multicast, accessing rate constraints of nodes in the distribution tree. (See abstract).

As for claims 10, 20 and 30, Sen fails to disclose processing instructions executed as multiple threads. However, Tremblay expressly discloses processing instructions executed as multiple threads at col. 5, lines 38 - 44. Hence, it would have been obvious at the time of the invention for an artisan of ordinary skill in the art to combine the apparatus for viewing image data disclosed by Sen with processing means executed as multiple threads as disclosed by Tremblay.

This system would be preferable in that the quality of the streaming video is not a function of the available bandwidth.

CONCLUSION

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Coffy whose telephone number is (571) 272-3997. The examiner can normally be reached on 8:30 - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-3997. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

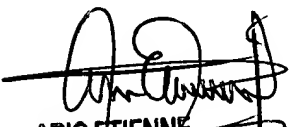
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

Art Unit: 2157

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Coffy
Patent Examiner
Art Unit 2157

EC
October 12, 2005



ARIO ETIENNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100